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## Call for Abstracts

**Submission Title:** Development of a Groundwater Transport Model for 1,2-Dibromoethane (EDB) in Albuquerque, N.M.

**Reference ID:** 0255-000057

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### Abstract

**Abstract Title\*** Development of a Groundwater Transport Model for 1,2-Dibromoethane (EDB) in Albuquerque, N.M.

**Topic\*** Environmental Fate and Modeling

**Presentation Preference\*** Platform

**Student\*** No

**Student Award Competition\*** No

**Abstract\*** A three-dimensional groundwater flow and contaminant transport model is being developed to study the mass transport of 1,2-dibromoethane (EDB) in Albuquerque, N.M. EDB is a highly toxic compound that tends to be mobile and persistent in groundwater systems. Past releases of jet fuel and aviation gasoline at Kirtland Air Force Base have resulted in groundwater contamination in the regional aquifer used for city drinking water. A large EDB plume currently extending over 6000 ft in length is migrating towards city supply wells in southeast Albuquerque. The regional aquifer, the Santa Fe Group aquifer system, provides about 60% of Albuquerque's drinking water. The Albuquerque-Bernalillo County Water Utility Authority reported that in 2010, ninety-two well supplied 19.6 billion gallons of drinking water from the aquifer.

The modeling objectives are to examine concentrations of EDB that may eventually reach production wells in southeast Albuquerque and evaluate ways to control plume movement. The computer model utilizes the MODFLOW program for simulating groundwater flow, and the multispecies transport model MT3DMS for contaminant transport. The model also includes the use of ZoneBudget for computing groundwater flux and changes in contaminant mass, and Modpath for capture zone delineation. Data are being provided by a site investigation that includes over one-hundred groundwater monitoring wells, and the model framework is based on geologic and hydraulic data from a variety of existing regional and local studies. Plume controls are being assessed by utilizing pumping scenarios including both extraction and injection wells to isolate the source, and limit the advancement towards production wells.

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